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WEAPONS

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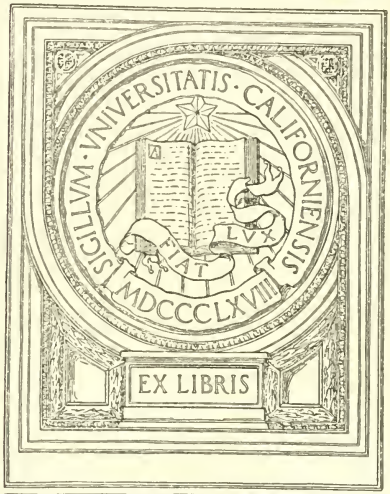
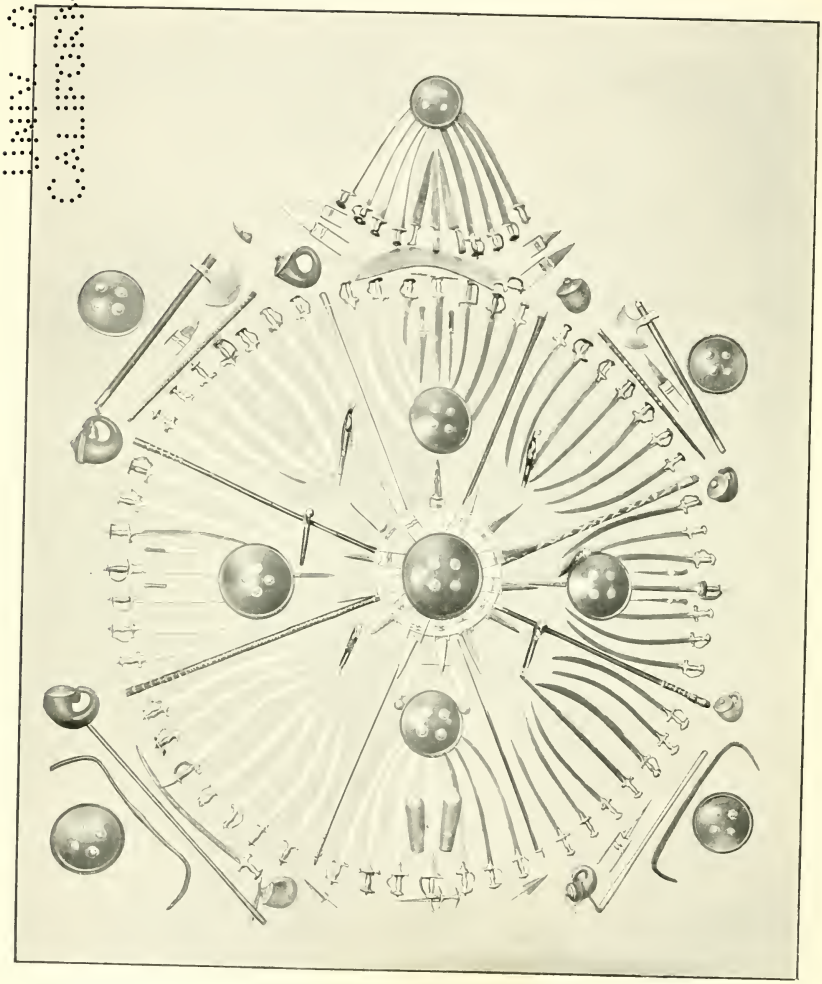


WEAPONS

PLATE 1.

LIBRARY OF CALIFORNIA



A COLLECTION OF WEAPONS, &c., TAKEN DURING THE MUTINY IN INDIA, 1857.

The tulwar and the khouttar form the principal weapons of the collection.

This trophy adorns the main staircase at the Royal United Service Museum.

WEAPONS

A BRIEF DISCOURSE ON HAND-WEAPONS OTHER THAN FIRE-ARMS

BY

B. E. SARGEAUNT

ASSISTANT CURATOR OF THE ROYAL UNITED SERVICE MUSEUM, WHITEHALL

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PREFACE

HAVING contributed two articles to the CAVALRY JOURNAL, one on the 'Development of the Sword,' and the other on the 'Progress of the Lance,' it occurred to me that a small work, such as the one which I have the honour to lay before the reader, might be of some interest and assistance to those desirous of acquiring some information concerning the weapons which have been employed in general warfare from time to time. I do not pretend to introduce the reader to an exhaustive and detailed history, but I attempt rather, in as concise a form as possible, to enumerate and describe all the principal weapons of war in such a way as to make the work of service to the wholly uninitiated. To further this object I have introduced plates of illustrations, accompanied by a description of each weapon contained in them.

The subject of fire-arms has not been brought within the scope of this work; it comprises a branch to be studied by itself; and I have, therefore, ignored these weapons entirely. Nor have I dealt with the various engines of war which have been contrived in so many forms from time to time. My book deals solely with hand-weapons without fire. It must be borne in mind that the jealousy of mankind has, from the very first, demanded the employment of weapons. In prehistoric times they were naturally rude, being made of such materials as the earth produced, without much fashioning at the hands of the warriors who carried them. The weapons at first were all offensive, and defensive arms were only introduced with the advance of civilisation and education,

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and the consequent development of knowledge, intelligence, and skill. At later dates weapons, which were once purely offensive, may be seen undertaking the dual duty of attack and defence. With the Romans the value of weapons for thrusting was fully recognised, and in their wars with the Franks this opinion was thoroughly established. Up to the Middle Ages thrusting, cutting, and stunning weapons were all employed, but with the appearance of heavy plate-armour their efficaciousness was much hampered; with the death of armour, consequent on the penetrating bullets of the musket, the sword and lance again appeared as weapons of great destruction.

I have divided this little work into three chapters, dealing respectively with weapons for stunning, cutting, and thrusting or stabbing, and a fourth chapter is added for the inclusion of certain miscellaneous arms which are not capable of classification under any of the headings of the first three chapters.

Finally I would add that specimens of nearly all the weapons mentioned in this work are to be found in the Royal United Service Museum at Whitehall, and I am indebted to this most excellent collection for the majority of my illustrations. I sincerely hope that all those who glance through the chapters of this book will be persuaded by them to visit the Museum at Whitehall, and I trust that my small efforts may be the means of inculcating increased interest in a collection which is truly deserving of the attention of every member of the community.

B. E. S.

Whitehall,
February 29, 1908.

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CHAPTER I

WEAPONS FOR STUNNING

Under this heading may be described two distinct kinds of weapons, those for stunning only and those performing the combined function of stunning and cleaving: each of these classes was seen in existence in earliest times. The oldest forms were made of stone and wood, the stone heads of the mallets being round, and those of the hatchets having a sharpened edge or edges. The stone head was either bored to receive the wooden handle, or else the two were lashed together by means of hair.

These primitive weapons have existed amongst uncivilised races up to modern times; for instance, the mallet of the Swan River District of Australia is merely a stone with a piece of wood bent and lashed round it with hair to form the handle. In America, too, prior to its discovery by Columbus, stone mallets were extensively used by the natives. Many uncivilised tribes seem to have preferred to retain these old stone weapons to exchanging them for more up-to-date arms of metal.

Even with the advance of civilisation war mallets of various kinds have at different times been given a place. In the thirteenth century the mallet consisted of a wooden handle with a leaden head which sometimes weighed as much as 20 lbs.

The Mace

The Mace * was a very early weapon and was used by the Cavalry of all nations. It was the weapon, too, ordered to be used by ecclesiastics when they went out to fight, for they were

* A mace, similar in form to those used subsequently by northern nations, was common amongst the Egyptians and Assyrians.

not permitted to handle the sword. It consisted in the Middle Ages of a heavy head, generally of metal, with a handle or staff, usually of such length as to be conveniently wielded with one hand. The head generally consisted of six or more radiating blades grouped around a central spike.

Maces were weapons peculiarly adapted to Cavalry. They seem to have been introduced into Europe from Asia in the middle of the thirteenth century, and were carried by horsemen in addition to other weapons. Sir James Turner, in writing of the mace, said: 'It is an ancient weapon for horsemen, neither was it out of use long after the invention of hand-guns, for we read of it used by most nations an hundred years ago, and certainly in a medley they may be more serviceable than swords, for when they are guided by a strong arm we find the party struck with them was either felled from his horse, or, having his head-piece beat close to his head, was made to reel in his saddle, with his blood running plentifully out of his nose.' Again, Muratori observes: 'In a close conflict of Cavalry it was exceedingly difficult to overthrow or wound powerful men in armour sitting on horse-back, for their persons being enveloped in hauberks, helmets, and other iron coverings eluded the power of swords, darts, arrows, and such-like weapons. For this reason it was usual to strike men so defended with iron maces, or to turn the attack on the poor horses that by making them fall they might seize the rider, or if he had tumbled on the ground the weight of his armour might render him unable to contend with any effect. The horses' bellies were thus pierced with lances, swords, or any other sharp weapon.'

Matthew Paris, in describing a tournament held near Hertford in 1241, states: 'Many other knights and men-at-arms were also wounded and seriously injured with maces (clavis) at this same tournament, because the jealousy of many of those concerned had converted the sport into a battle.'

The mace seems to have been extensively used from the time of Edward II., and it was employed by all the heavy

Cavalry of the fifteenth and sixteenth centuries. Owing to the invention of fire-arms it was laid aside during the reign of Queen Elizabeth.

The Morgenstern

This weapon, which existed from the eleventh century, was a species of mace, and was used both on horseback and on foot, the horseman's weapon possessing a shorter handle than that of the foot-soldier. It consisted of a wooden handle with a heavy head bristling with spikes. The weapon owed its name to the custom of surprising the enemy at daybreak. Owing to the ease with which it could be manufactured, it was largely used by the peasantry in their wars. The weapon sometimes seems to have been termed a 'Hercules club,' and in the 'Commentaries of Sir Francis Vere,' when describing the siege of Ostend in 1601, it is recorded: 'We had firkens of ashes to blind the enemie, quadrant tenter-nails, stones and brick-bats, hoops bound round with squibs and fireworks, hand grenadoes, and clubs which we called Hercules clubs, with heavy heads of wood, and nails driven into the squares of them.' Morgensterns were for a long time carried by the Pioneers of the Trained Bands, or City Militia.

Military Flails

The Flail, or holy-water sprinkler, consisted either of a long shaft with several whips (corresponding to a cat-o'-nine-tails) with iron points, or else of a shaft with a spiked wooden ball or a plain iron ball suspended by a chain. Sometimes the weapon was composed of a spiked piece of wood, about two feet in length, attached by a ring to the end of a shaft. The name 'holy-water sprinkler' arose from the nature of the wounds which the weapon inflicted; it probably dates from the eleventh century, and was most used during the fifteenth century, especially on board ship. Flails with short handles belonged more particularly to the East.

The knout, a whip or scourge formerly used in Russia for the punishment of criminals, was the descendant of the flail. It was manufactured in many forms, and its effect was so severe that few of those who were subjected to its full force survived the punishment. The Emperor Nicholas substituted for the knout a milder whip.

War Hammers

The *martel de fer* was a long-handled weapon used by foot-soldiers, especially in the defence of fortified walls and in action against mounted men-at-arms. It is a very ancient weapon and gave its name, owing to its constant use, to one of the monarchs of France (715-741). In the fifteenth and sixteenth centuries the martel became an elaborately decorated and handsome weapon.

The horseman's hammer was a short-handled weapon used with only one hand by mounted men. It usually possessed one blunt or dentated face with a sharp point or beak on the opposite side of the handle, but sometimes both sides were pointed. The weapon was usually entirely of metal.

Battle-axes

Procopius, in speaking of the expedition of the Franks into Italy in the sixth century, says: 'Among the hundred thousand men that the king (Theodobert I.) led into Italy, there were but few horsemen, and these he kept about his person. This Cavalry alone carried spears. The remainder were Infantry, who had neither spear nor bow, all their arms being a sword, an axe, and a shield. The blade of the axe was large, its handle of wood, and very short. At a given signal they march forward; on approaching the adverse ranks they hurl their axes * against the

* A similar instance of weapons for the hand being subjected to jactation is found at the battle of Hastings, where the Anglo-Saxons hurled both their axes and their hammers at the enemy. Records also exist of daggers being hurled in this way in the fourteenth century.

shields of the enemy, which by this means are broken ; and then, springing on the foe, they complete his destruction with the sword.' The battle-axe was the immediate descendant of the hatchet and was the favourite weapon of all Germanic nations. It seems to have existed in three different forms—the 'taper-axe,' the broad axe, and the double-axe (bipennis). It also received the name 'francisca' from its popularity amongst the Franks. As an Infantry weapon it latterly consisted of a cuneiform head attached to a long pole. At the Battle of Hastings, in 1066, the Saxons several times beat back the Normans with the aid of their long heavy battle-axes. It is recorded that at the battle of Lincoln in 1141, King Stephen 'with his immense battle-axe slew some and struck down others until it was broken asunder.' Short battle-axes were used by horsemen ; it is probable that, like the mace, they were introduced into Europe from Asia. The Lochaber axe had a broad blade, and often possessed a hook at the back, or an implement for cutting the reins of a mounted man, and this was the cause of the introduction, in some cases, of reins of metal. In 1720 Dragoons carried an axe at the saddle-bow (*hache de dragon*).

Wooden War Clubs

Clubs of wood of various descriptions have existed amongst uncivilised races from earliest times, and they are found throughout the world, but they were especially prominent in the islands of the South Seas, where the natives cut and carved them with conspicuous dexterity. The study of the work of these islanders is one to itself; each island is characterised by its special weapons and implements and by the manner in which they are cut and carved. Two groups of islands will sometimes be found side by side, and while the one possesses highly artistic and ornamental weapons of war, the other will only produce those of the rudest description. Marquesas Islands and Hervey Islands are perhaps the two groups which produce the most artistic work, while

others, such as the Kingsmill Islands, only possess weapons of the roughest kind.

In Marquesas Islands and other groups, stones have sometimes been sharpened and used to form the head of a hatchet, the handles of which are usually very handsomely carved. In New Zealand the Meri is the characteristic weapon. It seems to be a combination of a cutting and stunning implement. It is seldom less than a foot or more than 18 inches in length, and is made of wood, bone, basaltic stone, or green jade.

PLATE 2

NOTES ON ILLUSTRATIONS

1. Four-sided war club, British Guiana. Length, 1 foot 4 inches; weight, $1\frac{1}{4}$ lb.

2. Circular war club with heavy indented head, New Caledonia. Length, 2 feet 8 inches; weight, 3 lbs.

3. Long war hatchet with elaborately carved wooden handle and stone head, Hervey Islands. Length, 3 feet; weight, 5 lbs.

4. War club, pick-shaped, New Caledonia. Length, 3 feet 5 inches; weight, $3\frac{1}{4}$ lbs.

5. Carved war club with broad flat end, Samoa. Length, 3 feet 5 inches; weight, 4 lbs.

6. Very heavy carved war club, $3\frac{1}{2}$ inches in diameter, Fiji Islands. Length, 3 feet 7 inches; weight, $7\frac{1}{2}$ lbs.

7. War club with knobbed head, Fiji Islands. Length, 3 feet $8\frac{1}{2}$ inches; weight, $4\frac{1}{2}$ lbs.

8. War club with a heavy and elaborately decorated head, Marquesas Islands. Length, 4 feet 6 inches; weight, $7\frac{1}{2}$ lbs.

9. War club with serrated head, Friendly Islands. Length, 3 feet $7\frac{1}{2}$ inches; weight, $2\frac{3}{4}$ lbs.

10. War club with bent heavy head, Fiji Islands. Length, 3 feet 1 inch; weight, $8\frac{1}{4}$ lbs.

11. Nubian war club. Length, 2 feet 6 inches; weight, $2\frac{1}{4}$ lbs.

12. Very heavy war club with a curious spur on the head, Fiji Islands. Length, 4 feet 4 inches; weight, $10\frac{1}{4}$ lbs.

13. War club with circular head, New Caledonia. Length, 2 feet 2 inches; weight, $2\frac{1}{2}$ lbs.

14. Short war club with heavy circular head, Fiji Islands. Length, 1 foot 5 inches; weight, 2 lbs.

PLATE 2.

CHAPTER II

WEAPONS FOR CUTTING

The Sword

The exact origin of the sword is unknown, but one thing is certain, the weapon has no connection whatever with the spear-head, dagger or other weapons of similar description, and those who attribute its existence to gradual improvements wrought on primitive stabbing arms are deceived; it is more likely the outcome of an early weapon corresponding in shape to the Meri * of New Zealand, for it was primarily a weapon of offence or attack, and this by means of cutting and not by thrusting. The employment of the sword as a thrusting weapon is attributable to the advance of civilisation and the consequent growth and progress of the art of war; and this may be illustrated by the Roman swordsmanship in the second Punic War, a war which taught them that a weapon for thrusting was more profitable and serviceable than one for cutting.

The sword has always been an arm for both Cavalry and Infantry from earliest times. In the year 710 B.C. the Assyrian horseman, riding without either saddle or spurs, always carried a lance and a sword.

The Greek soldier possessed, as weapons of offence, a sword, at first short and broad, double-edged and sharp-pointed, with a rectangular sheath always worn on the right side; a 'parazonium'

* The Meri is a war club, with somewhat sharp edges, which was used by the natives of New Zealand. It is seldom less than a foot or more than 18 inches in length, and is made of wood, bone, basaltic stone, or green jade. Some excellent specimens are to be seen in the Royal United Service Museum.

(a short, broad dagger corresponding to the 'langue de bœuf' of the Middle Ages) worn on the left; a lance from eleven to fifteen feet in length, the blade broad, long, and sharp, rounded towards the socket and with a cross-piece in the centre; and lastly the javelin. The Greeks possessed no Cavalry during their early history, but it is recorded that they commenced to enrol horsemen in the year 400 B.C.

The Roman Cavalryman was equipped like the Greek. In the year 202 B.C. the Romans recognised the superiority of iron weapons over bronze, and commenced to equip their army accordingly. The iron thrusting sword of the Romans was seen to great advantage against the 'scramasaxe' or cutting sword of the Franks, and also against the clumsy pointless swords of the Britons. It must be borne in mind that the use of the sword as a weapon of combined offence and defence is quite modern.

The sword in use in Europe from the Roman invasion of England until the end of the fourteenth century underwent but slight constructional changes; it suffered alterations at various dates in the breadth and length of the blade. Swords of the fifteenth century are distinguishable by a raised ridge running along the centre; they were chiefly two-edged thrusting swords with straight cross-pieces—the stamp of guard which had existed from the year 700. A good illustration of a sword of this description is that of Charlemagne in the Louvre; it is 3 feet in length, with a very wide blade and blunted end. It was customary to kiss the cross-piece in lieu of a crucifix, and consequently the portion of the blade near it was not infrequently decorated with the engravings of saints. In Italy the manufacture of swords was conducted on so large a scale that the armourers of the single town of Milan were able, after the battle of Macalo (1427), to supply in a few days arms for 4,000 Cavalry and 2,000 Infantry soldiers. Towards the close of the fifteenth century the cross-piece began to curve inwards towards the blade, although during the twelfth, thirteenth, and fourteenth centuries this form of hilt had been sometimes adopted.

The two-handed sword, which probably came into use at the close of the reign of Henry V., was at the height of esteem at the commencement of the sixteenth century—a good specimen of the fifteenth century is to be seen at the British Museum; it is 5 feet 8 inches in length, and was the State sword of Edward V. At the arsenal of Berne there is a Swiss fifteenth-century sword, 4 feet in length, with a serrated edge; a similar one, but of the sixteenth century, is to be seen in the Royal United Service Museum. With the termination of the sixteenth century the two-handed sword entirely disappeared. Pietro Monti, in 1509, speaks highly of the value of these weapons, and Giacomo de Grassi of Modena, in his 'True Art of Defence,' translated by an English gentleman and edited by Churchyard in 1594, says, 'Because one may with it, as a galleon among many gallies, resist many swordes or other weapons; therefore in the warres it is used to be placed neere unto the Enseigne or Auncient for the defence thereof, because being of itselfe liable to contend with manie, it may the better safeguard the same. And because its waight and bignes requires great strength, therefore those onlie are allotted to the handling thereof, which are mightie and bigge to behould, great and strong in bodie, and of stout and valiant courage.'

In the sixteenth century the single-handed sword, still two-edged, became more narrow and pointed, and was employed almost entirely for thrusting. The Roman preference of the point was rediscovered under new conditions. and fencing became an art. Early in the eighteenth century, the use of the edge having been finally abandoned in rapier-play, the two-edged blade was supplanted by the bayonet-shaped French duelling sword. Though it had been known in the fifteenth century, the 'pas d'âne' became almost universal with the sixteenth; it was a species of guard which came partly over the edge of the blade, and probably originated from the fact that at this period swords were frequently made with handles* so short that it was

* The hilts of Eastern swords are invarably made very small, allowing no play whatever to the wrist; this is due to the fact that the Oriental swordsman uses his

PLATE 3

NOTES ON ILLUSTRATIONS

1. Claymore used by an officer at the siege of Quebec in 1759.—Royal United Service Museum.

(As already remarked, swords with this description of hilt are often wrongly termed 'claymores'; but it must be borne in mind that the Scotch claymore, up to the year 1700, possessed a plain cross-guard with no basket hilt.)

2. English backsword used by Oliver Cromwell at the siege of Drogheda in 1649, where he himself led the storming party at the final assault.—Royal United Service Museum.

3. Two-handed sword, being the State sword of Edward V. (1475–1483). It is 5 feet 8 inches in length. The sheath and handle are enriched with polychrome enamels.—British Museum.

4. Sabre of the sixteenth century with bone handle and curious guard. It was brought from Candia.—Royal United Service Museum.

5. Turkish yataghan; the handle and sheath are plated with silver, embossed and engraved.—Royal United Service Museum.

6. Sword of the fifteenth century, two-edged, with point and ridged blade. It possesses curved quillons and a large pommel, 3 inches in diameter. The sword was discovered in the Thames in 1739 when excavating for Westminster Bridge. The two metal lockets and the point of the scabbard are seen on the blade, the intervening portions of the scabbard having been worn away.—Royal United Service Museum.

7. Cut and thrust sword of Bilbao manufacture; the blade is 3 feet in length.—Royal United Service Museum.

8. Sword of the tenth century.—Musée d'Artillerie, Paris.

9. German or Swiss sword of the first half of the sixteenth century.—Musée d'Artillerie, Paris.

10. Italian sword of about 1560, attributed to Benvenuto Cellini.—Musée d'Artillerie, Paris.

11. Sword of the twelfth century.—Musée d'Artillerie, Paris.

12. Cut and thrust sword of the middle of the fifteenth century.—Musée d'Artillerie, Paris.

13. Sword of a foot-soldier of the sixteenth century.—Musée d'Artillerie, Paris.

14. Straight, two-edged sword of the sixteenth century with straight quillons and pas d'âne.—Royal United Service Museum.

15. Scythed yataghan of Tonarik manufacture. The same tribes also used a form of hatchet yataghan.—Royal United Service Museum.

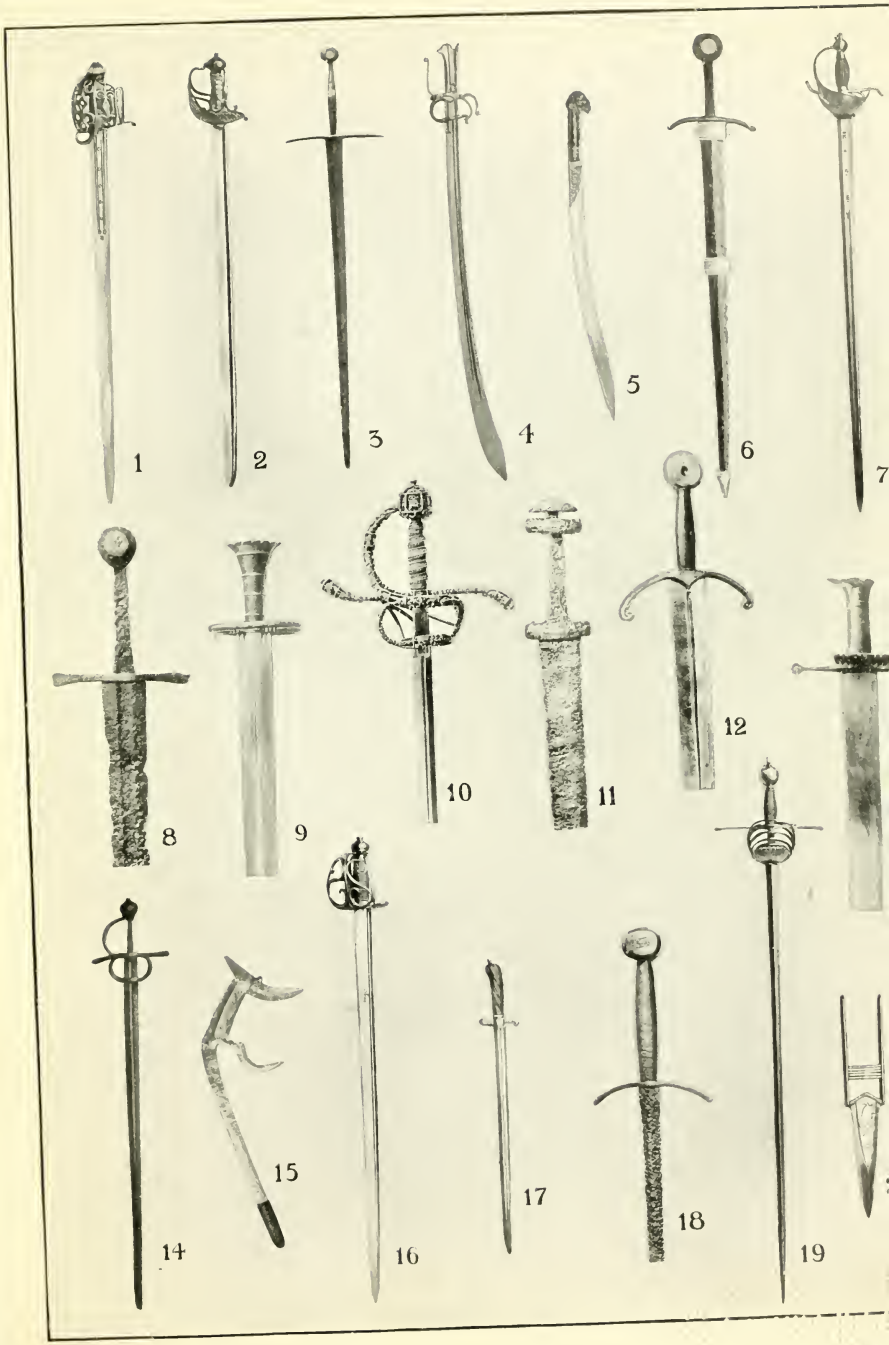
16. Backsword of the seventeenth century with brass basket hilt.—Royal United Service Museum.

17. Short sword, or hanger, worn by Major-General James Wolfe when he fell in the hour of victory at Quebec on September 13, 1759. It was given by his mother to his schoolfellow and friend, General Hon. George Warde, Colonel of the 4th Dragoon Guards. It bears the inscription: 'Heinrich Koll me fecti, Heinrich Koll clingen.'—Royal United Service Museum.

18. Sword of the latter part of the fourteenth century.—Musée d'Artillerie.

19. Italian rapier of the seventeenth century. The blade is 4 feet in length.—Royal United Service Museum.

20. Hindoo khouttar with 'langue de bœuf' blade; this description of blade existed in the parazonium of the ancient Greeks and Romans, and in the Italian anelace of the fifteenth century.—Royal United Service Museum.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impossible to grip them with the whole hand, consequently the thumb and forefinger were exposed along the blade.

The Cavalry sword of the sixteenth century was the 'estoc,' a thrusting weapon, carried rather as an auxiliary lance than as a sword. The rapiers of the 'estoc' shape were not in use before the reign of Charles V. of France, in whose time the modern art of fencing originated. The blades of the 'estoc' rapiers were made at Toledo, Seville and Solingen, and are very celebrated.* The 'estoc' was in some cases worn in place of the dagger at the right side, in others attached to the saddle, while the sword of arms was attached to the belt or armoured skirt of the knight. The rapier has a basket hilt, either solid or perforated, and a long straight handle. In the reign of Elizabeth the rapier became so popular that the term 'sword' was almost forgotten. Giacomo Grassi calls the rapier 'single-sword,' and gives instruction for cutting as well as thrusting with it. He also gives instructions for cutting with two swords at the same time, and in referring to this performance he talks of employing 'a case of rapyers.'

Notwithstanding the introduction of the rapier and its popularity in the middle of the sixteenth century, the sword was still continued for war. 'The Earl of Essex,' Silver relates, 'to his unspeakable honour, and to our inestimable benefit, has begun to reduce the wearing of swords with hilts over the hands.' Silver asserts that a man armed with a sword and dagger is more than a match for one armed with a rapier and poignard.

The real Scotch claymore had a plain cross-guard, without the basket hilt which protected the entire hand: swords and sabres with these hilts are often wrongly called claymores, but they were used only by the Venetians, and were called 'schiavone,' being the weapon used by the Doge's guards in the sixteenth and

sword chiefly from the shoulder, bringing into action all the strong muscles of the forearm and of the back. The European swordsman cuts mainly from the elbow.

* Amongst other places famous for their blades are Madrid, Cordova, Catugel, Badajoz, Valencia, Orgoz, Valladolid, Saragossa, and Bilbao.

seventeenth centuries; in Scotland they were not known till the eighteenth century.

There existed in the Meyrick collection at Goodrich Court a sword described as 'a Scotch basket-hilted sword,' the blade was stamped with the name Andrea di Ferrara, the hilt was apparently of the time of James II. Arthur Wilson, in his account of that monarch's reign, says that Lodowick Stuart, Earl of Richmond, paid court to Frances Howard, Countess of Hertford, during the lifetime of her husband, who died in 1621, 'sometimes in a blue coat with a basket-hilt sword'; but it is possible that the Spanish shell-guard was intended by this expression.

The handle of the sword of the seventeenth century was even more complicated than that of the sixteenth. Many of the handles have quite a profusion of guards, counter-guards and 'pas d'âne' guards. Their shape indicates a decline in taste; towards the latter part of the seventeenth century the quality of the blades deteriorated considerably.

Double-edged swords were prevalent in Europe down to the seventeenth century. The single-edge blade, or back-sword, as it is called in England, is well illustrated by the Scotch weapons. A good example of an early back-sword is that of Oliver Cromwell, in the Royal United Service Museum. Antonio Picinino and Andrea di Ferrara were the most famous of Italian makers of sword-blades in the seventeenth century.

The origin of the Asiatic scimitar is, like that of the sword, untraceable; it was the 'acinaces' of the Romans, and undoubtedly gave rise to the sabre. It was used only by Oriental nations in ancient times, and afterwards by the Moors, by Saracens, and by the Turks. The handle of the scimitar has no guard, the blade is single-edged, short and curved; it is slightly wider towards the end. The places especially connected with its manufacture are Damascus and Khorasan. The sabre is a weapon very like the scimitar; it was unknown to the Greeks and also for some time to the Romans, but was probably known to the Persians and the inhabitants of Iberia at an early

date. The advantage gained by the scimitar and sabre over other forms of sword is in the fact that they possess a maximum of cutting power. The action of the curved edge in delivering a blow is to present an oblique and therefore highly acute angle section of the blade to the object struck. The disadvantages appertaining to sabres and scimitars are, firstly, the points are rendered almost useless for thrusting purposes; and, secondly, their capacities as defensive weapons, owing to their shapes, are much diminished. These two drawbacks have caused the scimitar type, after being in fashion for European Light Cavalry in the Napoleonic wars and up to the middle of the nineteenth century, to be discarded. Different forms of Oriental hatchet-sabres comprise the yataghan,* khandjar, flissa, konkri and kampak; they are all very much alike and require no description; they were used entirely for slashing.

As already mentioned, the Light Cavalry sword of the earlier part of the nineteenth century was of the scimitar pattern; the Heavy Cavalry arm was, however, straight and of considerable weight. Towards 1820 a new pattern was adopted, slightly lighter, but with the same straight blade and a large hilt.

Until the introduction of the machine proof, swords were proved by striking each side flat on a table, and then back and edge on a block of wood: after this the blade was bent each way until the curvature amounted to a shortening in the whole length of from four to five inches according to the pattern. This old method was naturally not so reliable as the machine test, for the simple reason that no two men would strike with the same amount of force, nor would any one man be striking with equal force throughout an entire day.

The essentials for a good sword are sharpness, balance, combination of strength with lightness, and elasticity with firmness.

* Many curious weapons were taken during the last war in the Sudan of the yataghan class; they were used by the Tonarik tribes, some being scythed while others were of the hatchet type.

PLATE 4

NOTES ON ILLUSTRATIONS

21. Heavy Cavalry sword, 1820.—Royal United Service Museum.

22. Trooper's sword, 1885.—Royal United Service Museum.

23. Persian sabre with Damascus blade.—Royal United Service Museum.

24. Light Cavalry officer's sword, 1815.—Royal United Service Museum.

25. Staff pattern sword, 1815.—Royal United Service Museum.

26. Light Cavalry trooper's sword, 1815.—Royal United Service Museum.

27. Officer's sword, Madras Light Cavalry, 1840.—Royal United Service Museum.

28. Yeomanry Cavalry sword, 1870.—Royal United Service Museum.

29. Sword (French) of the commencement of the seventeenth century. It possesses straight quillons and a pas d'âne.—Musée d'Artillerie, Paris.

30. Sword of King Francis I. (1515).—Musée d'Artillerie, Paris.

31. Rapier of King Henry II. of France (1547).—Musée d'Artillerie, Paris.

32. Sword of King Charles IX. of France (1560).—Musée d'Artillerie, Paris.

33. Italian sword; middle of the sixteenth century.—Musée d'Artillerie, Paris.

34. Heavy Cavalry sword, 1815.—Royal United Service Museum.

35. Persian scimitar with wavy blade.—Royal United Service Museum.

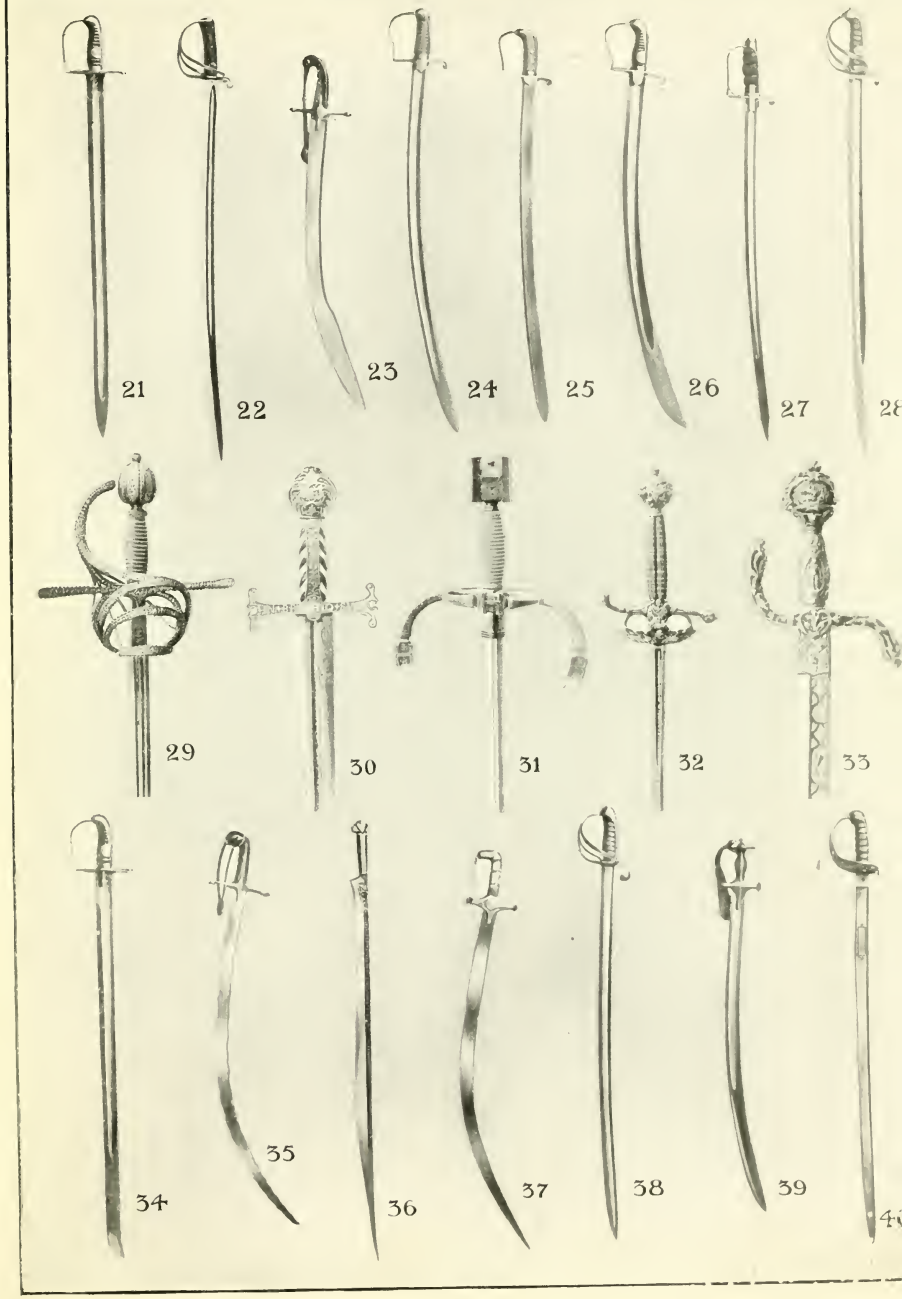
36. Kabyle flissa with ornamented handle. The khandjar and yataghan much resemble this weapon. None of them possesses a guard.—Royal United Service Museum.

37. Turkish scimitar, with ivory handle and gold mountings.—Royal United Service Museum.

38. Cavalry officer's sword, 1880.—Royal United Service Museum.

39. Sikh tulwar, a form of scimitar, carried in a wooden sheath.—Royal United Service Museum.

40. Officer's Heavy Cavalry sword, 1860.—Royal United Service Museum.



[To face

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It is an accepted truth that a thrust * is always more efficient than a cut, and therefore a sword which is too elastic vibrates in the hand and is of little use. A point of importance connected with a sword and one very little studied is the centre of percussion: it is that part of the sword in which its whole force is concentrated and on which there is no vibration. The portion of the sword from the centre of percussion to the point is termed the 'faible,' or portion to be employed for cutting; the lower part from the centre of percussion to the hilt is called the 'fort' and is intended for guarding.

The Glaive

This weapon, like the bill, is single-edged, but it differs from it inasmuch as the curve of the blade of the bill is inwards (*i.e.* towards the sharpened edge), while the glaive curves outwards. Only for a few inches near the point is the blade of the glaive double-edged. At the end of the blade nearest the shaft there is a hook or spur. The glaive probably owed its origin to the Celtic custom of fixing a sword to the end of a pole. It was a weapon much used on the Continent in the fourteenth century, and records exist of its having been used in the sixteenth and seventeenth centuries as a Cavalry arm. In England it was most used during the fifteenth and sixteenth centuries.

The Voulge

The Voulge was a weapon much used in Switzerland and France, in the former country from early times, and in the latter most especially during the fifteenth century, when there was formed a regiment of Infantry called voulgiers. It is a weapon consisting of a long, broad, one-edged blade which tapers to a

* Statistics have shown that a puncture in the chest or abdomen from a sword-point is more likely to prove fatal than the deepest cut on other parts of the body.

point. In some respects it resembles the pole-axe, but the blade is longer, and the weapon is always to be distinguished by the curious point which it possesses.

The Gisarme

This weapon was known in very early times, and was used as late as the battle of Flodden (1513). It seems to have been the weapon of the peasantry and of those who were not possessed of land to the value of forty shillings. It is a double-edged weapon armed with hooks, and it usually possesses a straight sharp point in the line of the shaft.

The Glaive-Gisarme probably had its origin in the fact that some of the Germanic tribes were accustomed to attach their scramasaxe swords to long shafts.

The Bill

The Bill, or war scythe, is a weapon much resembling the modern agricultural scythe as regards the manufacture of the blade, which has therefore only one edge, but the blade is less curved than the agricultural implement, and when fixed to a staff the military weapon appears to be almost straight with the exception of a slight bend inwards towards the point.

The ordinary bill was in use as early as the eleventh century, and it was not until the fifteenth century that it gradually became superseded by the pike. It was the usual weapon of the foot-soldier. Sir Roger Williams, in his 'Brief Discourse of Warre,' says, 'there ought to be amongst 1,000 pikes, 200 short weapons as halberts or bills, but the bills must be of good stuffe, not like our common browne * bills.' Giacomo de Grassi, in his 'Paradoxes of Defence,' 1599, advocates that the battle-axe, the halberd, the black-bill, the Welsh hook † or forest bill should

* Certain weapons were termed 'brown-bills' or 'black-bills' on account of the colour of the material put on the metal to preserve it.

† The Welsh hook is a species of bill.

all be five or six feet long, but not longer, and he holds them up as being superior to all other weapons.

The bill was extensively used by the English foot-soldiers until the fifteenth century, especially in defending themselves against Cavalry, and even in the sixteenth century it was still considerably used, as may be seen from the fact that estates, according to their value, were rated to provide so many bills. The parish of Yoxhall in Staffordshire, for instance, was required in 1569 to provide 'Pikemen 3, Billmen 5, Harquebuz 9.' In the seventeenth century the bill seems to have been only used by civic guards.

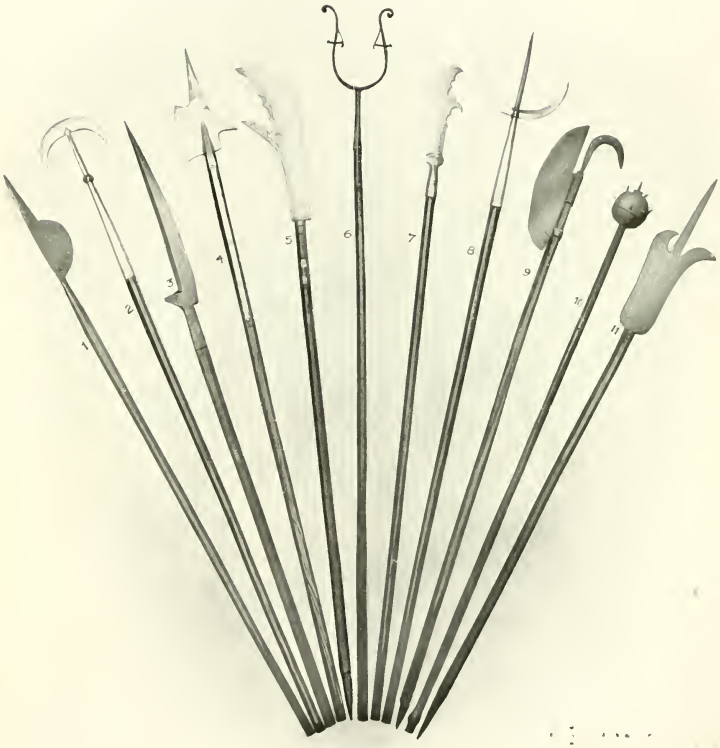
As a naval weapon it was very conspicuous on board ship in the sixteenth century. The 'Mary Rose,' in the reign of Queen Elizabeth, was fitted out with 120 of these weapons. In modern times the rarity of the bill, as compared with other weapons of the same period, seems to be due to the fact that, with its disuse as a military weapon, it was found to be of considerable domestic advantage, and consequently it was used as an ordinary implement until worn out.

PLATE 5

NOTES ON ILLUSTRATIONS

1. German voulge, fifteenth century.
2. Chinese 'half-moon,' a weapon with a sharp edge for cutting.
3. German glaive, fifteenth century.
4. Swiss halbard, fourteenth century.
5. Chinese glaive.
6. German catchpole, sixteenth century.
7. Chinese bill.
8. Chinese trident spear.
9. Scottish Lochaber-axe of the fifteenth century.
10. Swiss morgenstern, fifteenth century; the head is a wooden ball studded with iron spikes.
11. English black bill of the early part of the sixteenth century; it is interesting owing to its possessing two hooks.

PLATE 5.



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CHAPTER III

WEAPONS FOR THRUSTING OR STABBING

The Lance

To what extent distinction may be drawn between the lance and the spear is difficult to determine. It would seem that the lance was at all times essentially a weapon for thrusting, while the spear was one for either thrusting or hurling: also during modern times the lance would appear to have been almost always fitted with a shoe, while the spear was not. In the past the lance, spear, and pike * seem to have been constantly confused, and the German term for a lance † was actually 'Speer.' In ancient French these three weapons were all known by the one word 'bois.' In early English, spears and lances, especially those of mounted men, are not infrequently collected under the name 'staves.'

The origin of the lance ‡ seems to have been a pole sharpened at one end, or perhaps at both, and with the advance of civilisation the point was made of different hard materials according to the period of civilisation, at first of flint, and later of bronze, iron, and steel. The very earliest times saw the lance in use, and it was quite common amongst the Assyrians and Egyptians. In his work 'The Armament of Cavalry,' published at Allahabad in 1875, Lieutenant G. H. Elliott says: 'Pliny attributes to

* The pike was a weapon used only on foot. It was introduced into France by the Switzers in the reign of Louis XI., and was soon afterwards largely used by other European armies.

† The modern military term is of course 'Lanze.'

‡ Lances and spears seem to have been the most favoured weapons amongst uncivilised races and tribes. They have been found in all shapes and forms.

Etolus, son of Mars, the invention of the lance, which he called "jaculum cum amento," but this would appear to be a mistake, for the "jaculum cum amento" was a javelin, or species of dart, used for throwing only, and was carried in addition to the lance; the "amentum" being a strap attached to the centre of the javelin to facilitate the throwing. It seems to have been fitted to all kinds of throwing spears, and according to Polybius the "hasta velitaris" of his day was three feet long. The shaft was slender and tapered so as to bend after striking.'

THE ROMAN 'JACULUM CUM AMENTO' FOR THROWING

It appears to be certain that the lance in use by the Greeks about the year 1000 B.C. was from eleven to fifteen feet in length, with a long, broad-pointed head of bronze, fitted with a cross-piece. At this time it was used for thrusting, and the warriors of the day also possessed a light javelin for throwing. It must be borne in mind that at the commencement of their power the Greeks possessed no cavalry at all; they commenced to enrol horsemen about the year 400 B.C.

Evidence exists that in the year 202 B.C. the Romans made their lance-heads* of iron and steel instead of bronze, and the superiority of the Roman weapons over the bronze-pointed arms of the Gauls was very marked.

The Romans divided their army into three distinct branches, each having a special function of its own. They consisted of (1) the Cavalry, (2) 'Velites' (skirmishers), and (3) 'Hastarii' (spearmen). The men of the third class were armed with a long lance, a small dart or javelin

* Polybius gives the length of the pilum as $6\frac{1}{2}$ feet, of which the iron head was one-third and the shaft two-thirds; but the tang went half-way up the shaft, so that there were three parts of equal length—head, head in shaft, and shaft. The weight of the pilum varied from about $1\frac{1}{2}$ lb. to 3 lbs.

for throwing, and a sword which was worn, after the Greek fashion, on the right side.

No regulation size for the lance seems to have existed amongst the Greeks, the Romans, or even amongst the horsemen of the Middle Ages. Every man had his lance made to suit his strength and his stature, for the weight of a long lance was very considerable, it being generally made of ash ; in fact, among the Romans ash seems to have been almost universally employed, and writers in verse actually use the word 'fraxinus' (ash) to indicate the lance * itself.

From the eighth to the thirteenth centuries after Christ the lance seems to have undergone no change. It was a long heavy weapon used both by horsemen and by foot-soldiers. It was customary for the Norman horsemen when charging to place the butt of the lance against the arçon or bow of the saddle.

The ash lance of the Normans was of considerable weight and generally about twelve feet long ; the metal head was fixed to the staff by a socket. Pennons were sometimes used by them, and it is interesting to record that during the tenth and eleventh centuries they were attached to the lance below the socket of the lance-head. With the Normans the lance and the sword were the marks of 'free men.'

THE ROMAN 'PILUM.' LENGTH 6½ FEET. WEIGHT ABOUT 2½ POUNDS

At the end of the twelfth century the lance used at the tournaments became very heavy, the shaft being so thick that it was

* The word 'lance' is unquestionably derived from the barbarous Latin 'lancea.' Hirtius, the author of the eighth book of Cæsar's 'Commentaries of the Wars with the Gauls,' says : 'Lancea infesta medium femur transjicit.'

PLATE 6

NOTES ON ILLUSTRATIONS

1. Malay lance with steel shoe. Length, 6 feet 3 inches; weight, 1 lb. 3 ozs.

2. Indian steel lance, engraved throughout and four-sided towards the point. Length, 6 feet 8 inches; weight, 5 lbs. 4 ozs.

3. Irish pike used at the battle of Vinegar Hill, June 21, 1798, during the Irish rebellion. Length, 7 feet 2 inches; weight, 2 lbs. 12 ozs. The pike was a weapon used only on foot. It was merely the lance of the Cavalry adapted to Infantry. Morris pikes were copied from the Moors, and were very long. They were used during the reigns of Henry VIII. and Elizabeth. The shafts were covered with small nails for protection.

4. Combined lance and blow-pipe, Malay. Length, 7 feet 10 inches; weight, 3 lbs. 3 ozs.

As a rule the bore of the blow-pipe, both from Malay and South America, does not exceed a quarter of an inch in diameter. Through it are blown poisoned arrows, made of split cane, from a foot to 15 inches in length, wound at the butt with fibrous material so as to exactly fit the bore of the blow-pipe.

5. Indian lance painted. Length, 8 feet 9 inches; weight, 3 lbs. 5 ozs.

6. British lance, shaft of ash, date about 1820. Length, 9 feet 1 inch; weight, 4 lbs. 4 ozs.

7. Sergeant's partizan, 1780. Length, 9 feet 2 inches; weight, 5 lbs. 8 ozs.

8. Wooden spear or lance with numerous wooden barbs, Fiji Islands. Length, 9 feet 3 inches; weight, 2 lbs. 12 ozs.

Wooden barbed spears were the principal weapons of many of the islands of Melanesia, and were also extensively used by the natives of Australia, where the wooden barbs were usually lashed to the shaft with hair. These spears were used for hunting and fishing as well as being weapons of war.

9. Heavy tilting lance of the sixteenth century. Length, 10 feet 6 inches; weight, 5 lbs. 8 ozs. The tilting lance differed from a war lance in that it possessed a coronal instead of a point. The coronal consisted of four or five small points for gripping the armour, but they were not intended to penetrate.

10. Indian lance painted. Length, 11 feet 8 inches; weight, 3 lbs. 12 ozs.

11. Long Indian lance, painted throughout, with a cluster of silk below the socket. Length, 12 feet; weight, 3 lbs. 4 ozs.

12. Cossack lance used in the Crimea in 1854. Length, 10 feet 9 inches; weight, 3 lbs. 12 ozs.

13. A wooden spear or lance from Kingsmill Islands. For 4 feet from the point it is edged with six rows of sharks' teeth; most of the weapons of the Kingsmill Group are edged in this way. Length, 9 feet 8 inches; weight, 4 lbs. 2 ozs.

14. A lance of bamboo carried in the charge of the 21st Lancers at Omdurman on September 2, 1898. Length, 9 feet; weight, 4 lbs. 12 ozs.

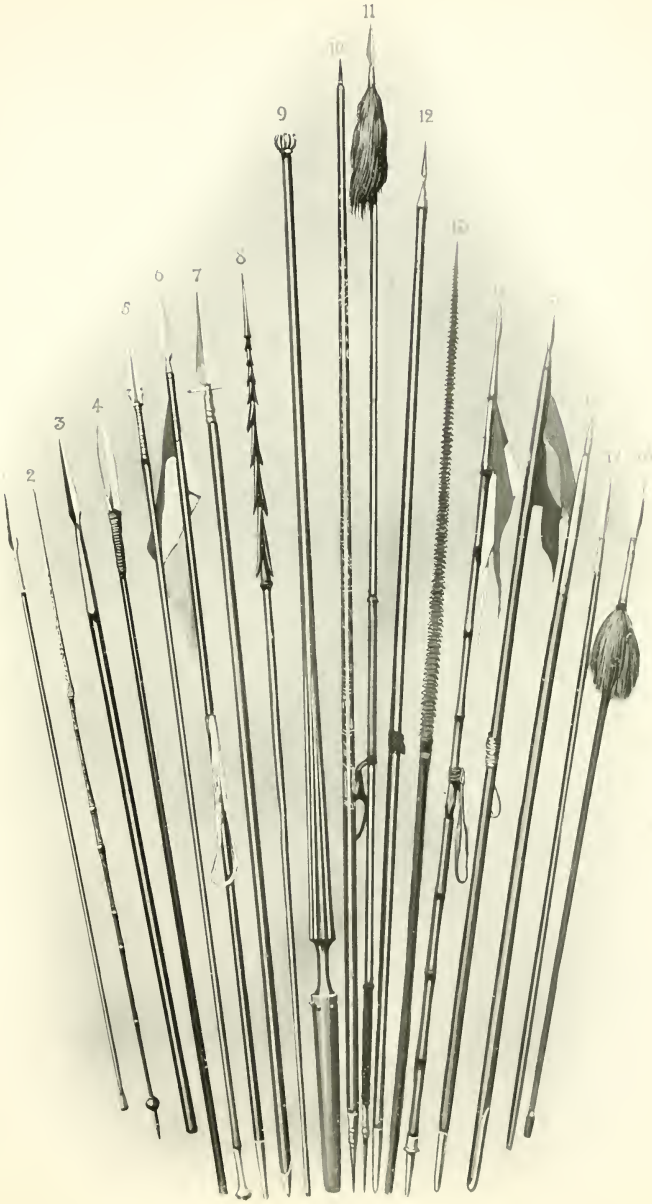
15. A French lance of ash, 1815. Length, 9 feet 1 inch; weight, 5 lbs. 6 ozs.

16. A boarding pike of the early part of the nineteenth century. Length, 8 feet 1 inch; weight, 4 lbs. 11 ozs. Some boarding pikes measured as much as 20 feet in length.

17. Ceylon lance painted throughout. Length, 7 feet; weight, 2 lbs.

18. Malay lance with a cluster of hair below the socket. The shaft is grooved with rings. Length, 6 feet 11 inches; weight, 2 lbs. 12 ozs.

PLATE 6.



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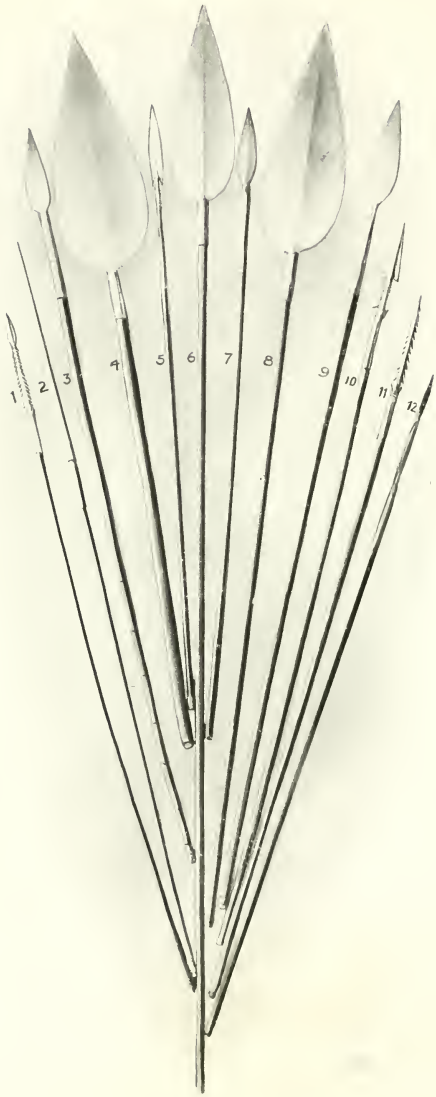


A COLLECTION OF SPEARS OF VARIOUS KINDS, CHIEFLY TAKEN DURING THE LAST WAR IN THE SUDAN.

The heads of Numbers 4 and 8 measure nine inches in width. In addition to these flat-headed spears the barbed species is found in the Sudan, but it is also extensively used in other parts of Africa.

Note the curious barbs on Numbers 1 and 11. This kind of spear is extensively employed for fishing. Number 5 belongs to Central Africa.

[*To face p. 31.*

necessary to hollow it to form a place small enough for the hand to grip it. The armour of necessity became heavier too in order to meet the tremendous blows from the lances. The mounted men attached the end of the lance to the cuirass, both to remove some of the strain from the arm and also to obtain a truer aim. Sometimes the mounted men would fight dismounted, when it was customary to cut off a portion of the shaft of the lance to render it lighter.

The tournaments were regarded as the best means of training both the horse and man. and they were conducted on very extensive lines; for instance, at Liège in 1148 one was held at which there took part fourteen princes and dukes, ninety-one counts, eighty-four barons, one hundred and thirty-three knights, and three hundred nobles. It was quite a frequent occurrence that forty persons were killed in these tournaments during one passage-at-arms, and it is known that more honours and decorations were conferred at them than for service and valour in actual warfare.

At this period lances were also used by Infantry to defend themselves from Cavalry; in such cases the butt of the lance was fixed in the ground and the point was placed level with the horse's breast.

The Hobilers of the sixteenth century with their demi-lances were the Light Cavalry of the period. Their ranks were generally composed of the squires who attended the knights and men-at-arms. Their chief duties were scouting, foraging, and guarding the camp; on an attack they were expected to hold the enemy at bay until the heavily armed knights were ready equipped for the fray. The demi-lance was so called from the fact that it was necessary to hold it half-way down its entire length; it was a very long slender weapon, considerably longer than the heavy lance of the date.

The 'Swedish Feather' of the early part of the seventeenth century was a weapon of the partizan type, and was different from the 'Swine's Feather.' Scott in the 'Legend of Montrose' says:

'I was often obliged to run my head against my old acquaintances the "Swedish Feathers," whilk your honour must conceive to be double-pointed stakes, shod with iron at each end, and planted before the squad of pikes to prevent an onfall of the Cavalry.'

The lance of modern Cavalry seems to have originated with the French. Napoleon formed a Regiment of Polish Lancers in 1807, and Lancers did good service both in the Peninsula and at Waterloo. Lancer Regiments in the British Service date from 1816. The first regiment, raised in that year, owed its origin to the high opinion formed of the lance in the exploits of the enemy's Cavalry at Waterloo and elsewhere.

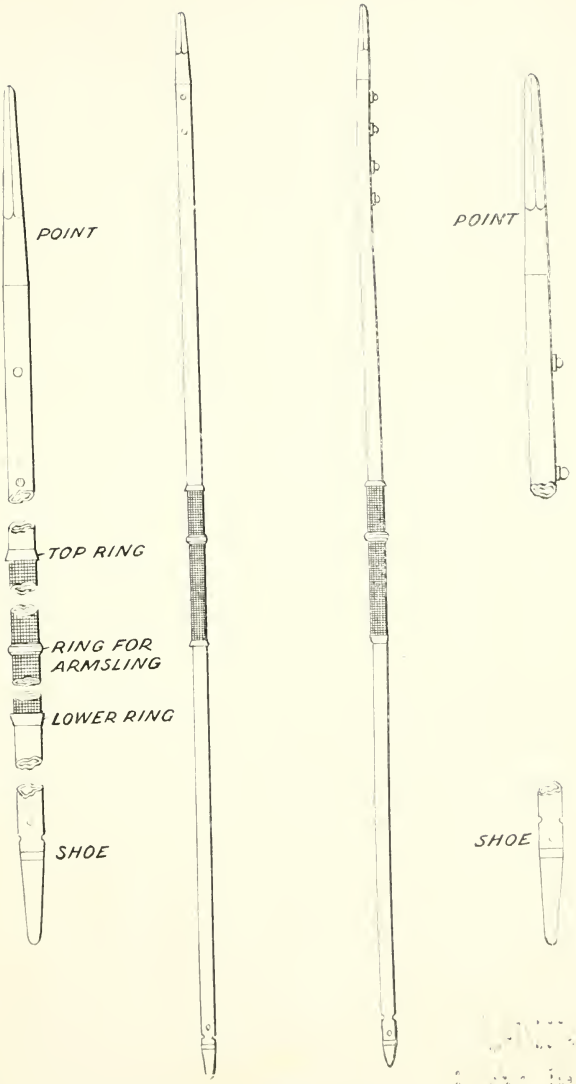
On the formation of Lancer Regiments the lances were made of ash,* and they were in use until 1877, when they were superseded by the bamboo. The difficulty presented in selecting suitable bamboos for shafts is very considerable; on no account can they be cut to fit the steel sockets of the point and butt, as can be done in the case of the ash shaft: directly the bark of the bamboo is interfered with the interior is liable to perish. It is, therefore, necessary to find bamboos of such size as will fit exactly the two steel sockets. For this reason, and also on account of diseases existing in the cane which can only be detected by experts (for the bark may appear to be quite sound), it is usually found necessary to discard eleven-twelfths of the bamboos sent for approval.

A modern bamboo lance would seem to be at its best during the first six years of its existence, after this time it gradually commences to deteriorate, and after twelve years † it is apt to become too dry, stiff, and withered to be fit for hard service. The influences of climate and temperature go a long way towards

* At the present time some ash shafts are to be found in the Service, which points to the increasing difficulty found in procuring bamboos.

Lances of ash, lancewood, and other woods were issued to certain Regiments in 1884 for experimental purposes; they were found to be considerably lighter than the bamboo, but broke and splintered on the slightest strain.

† This is the official average life of a lance, though sometimes it may last for many years more, provided it does not meet with a wound.



THE GERMAN HOLLOW STEEL LANCE, 1903.

Length over ten feet. Weight nearly four-and-a-half pounds.

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assisting its decay, and the bamboo would have a considerably longer life in England than it would in a dry climate like India for instance. In selecting bamboos not only does weight have to be considered, but the entire cane must be very carefully examined to see that no insect is present under the bark eating away the interior. It is quite possible to have a shaft of excellent outward appearance, but, on cutting, it would be found to be infested with small insects, only found in cane, which eat away the interior and render the bamboo of little use.

In 1895 some lances were issued weighing considerably over five pounds; they were found to be too heavy, and it appears they were only issued as the result of a fire at one of the factories in which many thousands of shafts were destroyed. The British lance of to-day weighs on the average about three pounds fourteen ounces, and is nine feet in length.

The present German lance is made of hollow steel with a quadrilateral point and iron shoe. Its weight is nearly four and a half pounds, and it is just over ten feet in length. Pennons are carried on the lances according to the nationality of the regiment; for example, Prussian regiments carry white and black as their colours, Hessian white and red, and Bavarian white and blue.

The Spear

The Spear has always been one of the most favoured weapons amongst uncivilised peoples. It is found throughout the world, and is frequently used as a weapon for hunting as well as one for war. The head is sometimes merely the shaft sharpened to a point, with perhaps a wooden barb attached to it; this form belongs to Australia, where also are found heads of sharpened flints attached to the shaft by means of cement. In other parts the wooden heads are sometimes flat and leaf-shaped, and in Melanesia the spears are cut from trees which possess natural wooden barbs by growth, and each spear would contain some dozens of these barbs for two feet up the shaft from the point.

In other parts of the world the head of the spear is usually of metal, varying in form, some being spade-shaped, others leaf-shaped, while others are barbed. In North-East Africa spears are found with flat heads six inches in diameter; in Central Africa the barbed type is frequently found, while in South Africa the assegai with its long, narrow head, is the weapon of Zululand.

The Boar-spear of the sixteenth century possessed a very heavy head, which frequently measured twelve inches in length.

The Halbard

This weapon, whose name appears to be derived either from the Teutonic ' Alle-bard ' (cleave-all) or from the German ' Halbe-Barthe ' (half battle-axe), was found many centuries ago in Scandinavia and Germany, but its introduction into France and England was by way of the Swiss. Early in the fourteenth century it was seen in the hands of the Flemings under the name of Godendac. The weapon is one for both thrusting and cutting, and it is also fitted with a hook for pulling down defences. The Swiss armed the whole of their front rank with halbardiers, but in order both to facilitate the handling of the weapons and also to make a more formidable opposition to the enemy, the men were alternately employed to thrust and strike. Some halbards possessed heads resembling a sword-blade and had two sharpened edges.

In England the halbard was in general use during the latter part of the fifteenth and commencement of the sixteenth century, and it appears only to have been abolished as a general weapon on account of its unwieldy construction and uselessness, owing to its shortness, against Cavalry. It was, however, long used as the weapon of the Colour Party for protecting the Colours, and it did not actually disappear from the Army until very late in the eighteenth century. The halbards of the sixteenth century were sometimes very elaborately engraved and gilt, especially in the case of those carried by palace guards.

The Pike

The Pike would seem to be an ancient weapon, but, like the halbard, it found its way into France and England from the Swiss. Markham, in his 'Soldiers' Accidence,' published in 1648, says the pikemen should have strong, straight, yet nimble pikes of ash-wood, well headed with steel, and armed with plates downward from the head at least four feet, and the full size or length of every pike should be fifteen feet besides the head. In the year 1645 the length of the pike was fifteen feet besides the head; in 1670 it was eighteen feet including the head, and in 1680 it was fifteen feet exclusive of the head and foot; the head at this latter date was four inches in length.

Lord Orrery, in his 'Treatise on the Art of War,' disagrees with the custom of the times of having the pikes of a regiment of miscellaneous lengths; he advocates all pikes being made of ash, and of sixteen and a half feet in length, with thin iron plates running down the shaft to the extent of four feet to prevent damage by the sword.

The Spontoon, or half-pike, was the arm of Infantry officers during the eighteenth century. It was last carried in France by the French Guards in 1789.

The Linstock was a pike fitted with two lateral branches from which the lighted ends of a match projected. It was introduced as a weapon for cannoneers who were frequently killed in picking up their halbards to defend themselves. It originated in the reign of Edward VI. Sometimes the linstock was so constructed as to act as a rest for the musket.

The Partizan, Spetum, and Ranseur

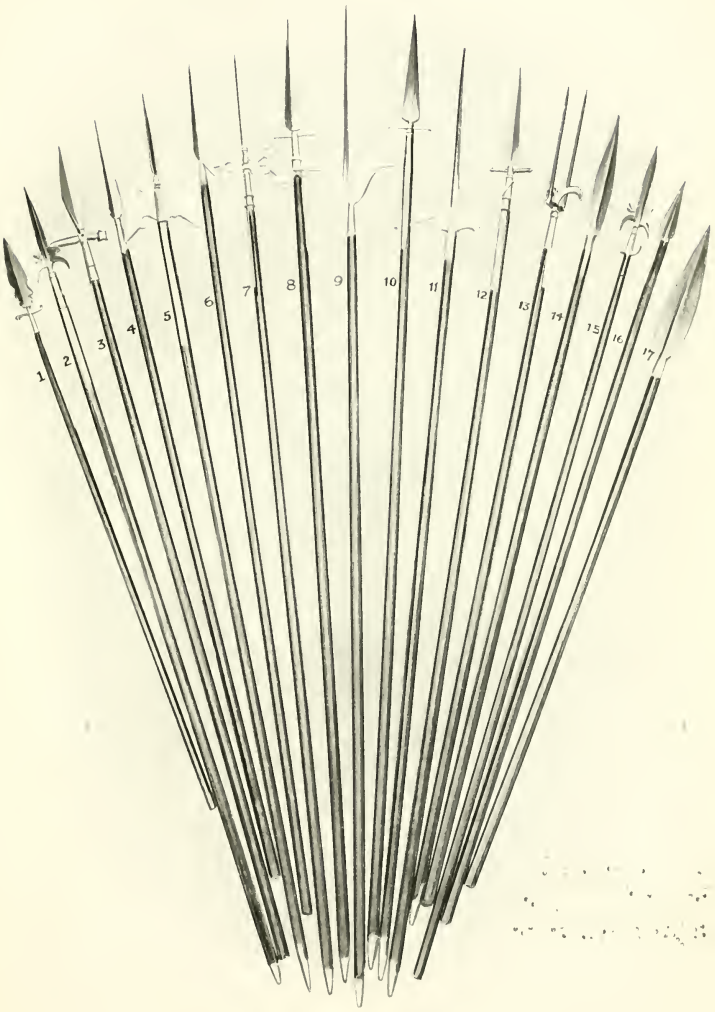
These three weapons being of similar construction are constantly confused, and even Pietro Monti, in his endeavours to define each in his work 'Exercitiorum atque Artis Militaris

PLATE 9

NOTES ON ILLUSTRATIONS

1. Officer's spontoon, eighteenth century.
2. Pike of the time of Charles II.
3. Pike of the Cromwellian period.
4. Partizan of the sixteenth century.
5. Halbard of the reign of George I.
6. Hunting spear, sixteenth century.
7. Halbard of the sixteenth century.
8. Sergeant's pike, eighteenth century.
9. Spetum of the time of Henry VII.
10. Sergeant's pike, eighteenth century.
11. Halbard of the time of Queen Elizabeth.
12. Sergeant's pike, eighteenth century.
13. Scaling-ladder fork, sixteenth century.
14. Hunting spear, sixteenth century.
15. Pike of the time of Charles II.
16. Hunting spear, seventeenth century.
17. Hunting spear, with very large head, seventeenth century.

PLATE 9.



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Collectanea,' published at Milan in 1509, is unsatisfactory. Each of these three weapons is usually characterised by lateral projections. In the case of the Ranseur, which was introduced from Corsica in the fifteenth century, the lateral projections usually take the form of barbs, the head of the weapon being very slender and sharp. In the arsenal of the city of Vienna there existed a ranseur whose head was quadrilateral and over a yard in length.

The Partizan had its origin early in the fifteenth century; the weapon owes its name to the large wounds which it caused. The head is usually very long and considerably broader than that of the ranseur, and it possesses two sharp edges as well as a point. In the sixteenth century the partizan was very frequently elaborately decorated, especially in the case of those carried by Royal guards.

The Spetum owed its name to the Italian 'spedo,' a spit. It was a weapon purely for thrusting, and seemed to differ only from the ranseur in having its lateral blades bow-shaped.

The Bayonet

The Bayonet was known in France during the latter part of the sixteenth century. Plug bayonets were introduced into the French Army in 1647, and into the English Army in 1663. They were designed so that the bayonet fitted into the muzzle of the musket; it was not for a considerable time afterwards that the ring bayonet was invented. By the invention of the ring method of fixing, it was possible to fire the musket with the bayonet fixed. During the first half of the nineteenth century the bayonet used in the British Service was triangular with a bend at right angles to the socket, to enable the charge to be fired with the bayonet in position; later in the century the straight two-edged, pointed bayonet was introduced which remained in use in the twentieth century.

The Dagger

The Dagger has been found throughout the world in all forms from very earliest times. It is essentially a weapon for stabbing, and usually possesses two sharpened edges running into a point; but many kinds exist where only one edge is sharpened, and it would seem that these are intended for cutting as well as for stabbing.

The dagger in Roman history was the 'pugio,' and it has been a most prominent weapon ever since. A species of the weapon with a wooden handle was carried by the Franks in the sixth century; similar weapons were also used by the Germans, Danes, Swiss and English. The Saxons relied very much on the dagger in their wars with the English, a well-known instance being when the English met with a heavy defeat on Salisbury Plain in 476. The weapon used by the Saxons was similar to the Roman 'pugio,' but in the eleventh and twelfth centuries the dagger became longer, the 'cultellus'* being a weapon peculiarly adapted to Infantry for fighting at close quarters.

In the fourteenth century the dagger became more elaborate, and the guard seemed to follow the pattern of that of the sword. At this time it appears to have occasionally been used as a missile weapon at close quarters in the same way that the Franks used to resort to hurling their axes at the enemy's shields. Illustrations of weapons being subjected to jactation may be found in the battle of Hastings, where the Anglo-Saxons hurled both their axes and hammers at the enemy, and also in modern times, when pistols, after being fired, have been hurled at the heads of the enemy.

During the sixteenth and seventeenth centuries the dagger seems to have been the constant companion of the sword. The 'Military Art of Training,' published in 1622, advocates very

* A statute of William, King of Scotland (1165–1214), has it, 'Habeat equum, habergeon, capitum e ferro, et cultellum qui dicitur dagger.'

strongly the wearing of the dagger by soldiers, and it quotes six reasons in support of the case: (1) The handsome appearance of the weapon; (2) Its advantage over the sword at close quarters; (3) Its superiority in a private combat; (4) Its utility for the speedy despatch of the vanquished; (5) Its advantage as a means for tethering a horse in the open; (6) Its awe-inspiring effect if drawn by an officer when sedition is imminent.

The 'Main-gauche,' as its name indicates, was a weapon used in the left hand in a duel, both for parrying and also for snapping the adversary's blade. Some forms of the weapon were constructed in such a way that on pressing a spring two additional blades were released which offered a very broad guard to the enemy's sword and a dangerous trap for snapping it. The usual form of 'main-gauche' consisted of a short weapon with an indented blade, the indentations being headed with small barbs which rendered it difficult to disengage the sword when once it had become fixed in the notch.

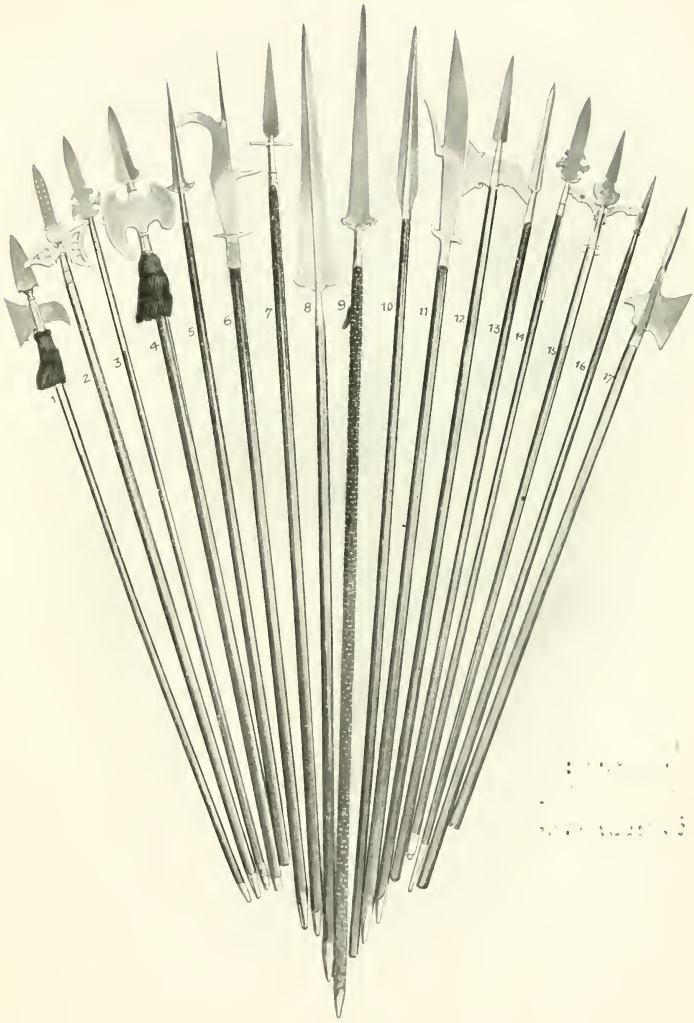
The dagger does not always possess a straight blade. The Hindoo khouttar (which is a weapon with a 'langue de bœuf' blade similar to that of an anelace) is sometimes found with a bifurcated blade. The Gurkha kukree has a blade curved in such a way that the weapon is more often used with an upward action. The Javanese krees almost always possesses a wavy blade which gives the weapon a most picturesque appearance. Some kinds of krees are elaborately carved on the handle, which is frequently of ivory, and sometimes jewels are found encircling it. The wagnuk, or tiger's claw, was an Indian weapon belonging to a secret society; it was invented about 1659 by Sewaja, a Hindoo. It was used for purposes of murder, and, as it counterfeited the wounds of a tiger's claw, diverted the suspicion from the offender. The weapon was extensively used in the Mahratta campaign of 1843. Chinese and Japanese daggers are distinguishable by the excellence of the metal. The daggers of Africa have a similarity peculiar to this continent, and the weapons of the western tribes have blades made of metal conspicuous by its lightness.

PLATE 10

NOTES ON ILLUSTRATIONS

1. Halbard of the time of George I.
2. Halbard of the time of William III.
3. Officer's spontoon, eighteenth century.
4. Halbard of the time of Charles II.
5. French partizan, sixteenth century.
6. English bill of the time of Henry VI.
7. Sergeant's pike, eighteenth century.
8. Large partizan, time of Edward IV.
9. Partizan, time of Edward IV.
10. Hunting spear, sixteenth century.
11. Italian glaive, or glaive-gisarme, end of the fifteenth century.
12. Halbard of the time of George I.
13. Hunting spear, sixteenth century.
14. Officer's spontoon, eighteenth century.
15. Linstock of the sixteenth century.
16. Three-edged pike of the time of Charles II.
17. Swiss halbard, beginning of the fifteenth century.

PLATE 10.



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The Poniard

The derivation of this word seems to be the Latin 'pugnus,' a fist. The Poniard was the 'parazonium' of the ancients, and the anelace of the fifteenth century may also be termed a poniard. As a rule the poniard was a diminutive dagger, and owing to the practice of carrying it hidden in the sleeve it must be regarded as a weapon of a private character rather than a military arm. Silver, in writing of the poniard after its introduction into England in the reign of Queen Elizabeth, says: 'We have lusted after the strange vices and devices of Italian, French, and Spanish fencers, but if we will have the true defence, we must seek it where it is, in short swords, short staves, the half-pike, partizans, glaives, or such like weapons of perfect length, not in long swords, long rapiers, nor frog-pricking poniards.'

The Stiletto was a small poniard introduced in the Middle Ages. Like the dagger, the poniard does not always possess a straight blade, and those found in such universal use by the Persians and Arabs are excellent examples of this fact. The short Malay Krees with its wavy blade provides a further instance.

The Misericorde

According to Fauchet, the eminent French antiquarian, this weapon obtained its name either from the fact that it was used to put persons out of their pain who were irrecoverably wounded, or from the cry for mercy and pity which arose from the vanquished on the appearance of the weapon. It was furnished with a highly-pointed triangular blade for penetrating the joints of the armour, and for this reason the weapon received its German appellation 'Panzerbrecher.' It seems to have existed only during the days of plate armour.

PLATE 11

NOTES ON ILLUSTRATIONS

1. A short Japanese dagger or knife: it only possesses one sharpened edge. Japanese weapons are noted for the excellent quality of the steel.

2. A Gurkha kukree. Another weapon distinguished by the curve of the blade which is the reverse to that of the sabre. In the case of the kukree the outer edge is unsharpened and the inner edge performs the cutting. The shape of the blade of necessity entails a curious upward action of the arm when stabbing. The kukree possesses a scabbard which is fitted with two smaller weapons of the same shape, and in this respect it recalls the dirk of the Highlands of Scotland.

3. A West African dagger, with the handle characteristic of the district.

4. A Burmese poniard with a 'langue de bœuf' blade, resembling that of the anelace of the fifteenth century.

5. A Mandingo dagger, Africa. It is two-edged, with a ridge running down the blade. The weapon is made of that light metal which is peculiar to certain districts of Africa.

6. An Arab poniard with a curiously curved blade which is peculiar to the poniard of the Arabs. A weapon with a similar handle is found in Persia, but the curve of the blade is not the same. Large numbers of the Arab species were taken in the war in the Sudan in 1889.

7. An Indian poniard with a slightly curved and curiously grooved blade. The handle is entirely made of steel.

8. Sharp-pointed, broad-bladed, two-edged dagger, East Africa. It is interesting on account of the two curious barbs below the handle.

9. A small Turkish khandjar with chalcedony handle. The yataghan, flissa and kandjar are all found in Turkey, and are weapons much resembling one another in construction. Some of these weapons are distinguished by their handsomely embossed silver handles.

PLATE 11.

[To face p. 12

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CHAPTER IV

MISCELLANEOUS WEAPONS

The Sling

The Sling is perhaps the most ancient of all the weapons which have existed down to the Middle Ages. It is constantly mentioned in the Bible, and the Greeks, Romans, and Carthaginians all maintained their companies or regiments of slingers.

It is a weapon most easy of manufacture, consisting as it does of merely cords with a well or socket. The missile is placed in the socket, and the sling is whirled round and round until the utmost velocity has been attained; then, on releasing one of the ends of the cord, the missile is despatched. Sometimes it was thrown to a distance of six hundred yards.

The sling was made in ancient times of flax, hair, or leather, and in the Middle Ages manufactured cord was frequently employed. The missiles consisted of stones, leaden bullets, or clay balls which had been baked in the sun.

The natives of the Balearic Islands had the reputation of being the most dexterous slingers; they practised the art to such an extent that their aim became almost infallible. It is said that this dexterity was due to the fact that these people were brought up from childhood to use the sling, and it was customary to place the food of the children out of reach, on a pole, and they were only allowed for each meal that amount of food which they could hit down with their slings. This practice was very soon responsible for true marksmanship on the part of the young people of the islands. These Balearic slingers always carried three slings; one was wound around their heads, another around

their waists, while the third was carried in the hand ready for use. The vehemence with which the missiles were projected was such that no armour of the day was able to withstand it.

The Franks seem to have employed the sling very extensively in entrenched positions, and in the fourteenth century both the French and the Spaniards appear to have employed a weapon, usually known as the staff-sling, against fortresses and strong positions; this same weapon was constantly seen in naval warfare at this time. It consisted of an ordinary sling attached to the end of a pole; the opposite end of the pole was held by the slinger with both hands, the sling hanging behind him, and by a rotary movement over the head of the weapon the missile was despatched.

To show the extensive manner in which slingers were employed in the Middle Ages the King of Castille at the end of the fourteenth century had some thirty thousand of them in his army. Slings were used until the seventeenth century. It is recorded that at the siege of Sancerre in 1572 slings were used by the Huguenots to economise their powder.

In the sixteenth century the sling and staff-sling were used for throwing grenades.

The Bow

The Bow has lived one very continent, and its life has been by no means a short one. It was a prominent weapon with the Egyptians, who, like the Greeks and Macedonians, employed it very considerably as an arm for the charioteer, who corresponded to the Cavalryman of later days. It was used as a weapon for Cavalry by the Romans* and Persians, and in later days by the Chinese and Mamelukes.

In its earliest days the bow seems to have assumed two forms—either it possessed two curves connected by a straight

* The Romans included only very few archers in their national army; but their auxiliaries, especially the Asiatic troops, employed the bow very extensively.

piece in the centre, or else it resembled the English bow of the Middle Ages. Even in its infancy the weapon was made chiefly of yew, though ash, elm, and other species of wood were also employed.

In England the use of the bow * as a military weapon dates from the battle of Hastings (1066). The Duke of Normandy, in addressing his troops prior to this battle, pointed out that for them victory was certain since the Saxons 'knew not the use of the bow.' For nearly six whole centuries following the battle of Hastings the entire male population of England made it its duty to become thoroughly acquainted with the use of the bow in every detail. England therefore at all times possessed a national militia, ready for the field at an hour's notice; and having regard to this fact it is not surprising during these centuries to find whole armies defeated and destroyed, and new, well-trained bodies of men in the field again within a very short time.

As a result of the universal and constant handling of the bow the English gradually gained the reputation of being the best archers † in Europe; and to still further increase military efficiency in this direction Acts of Parliament were constantly introduced for the purpose. Laws were established to insure a constant supply of staves, to secure the proper manufacture of arrows, and to provide outlying counties with facilities for possessing competent bowyers, fletchers, and arrow-head makers. In the reign of Edward IV. an Act was passed compelling all merchants trading with a country productive of bow-staves to import four staves as a due on every ton of the cargo carried into England. Again, bowyers had certain restrictions placed on them for the furtherance of national efficiency; for instance, in order to always have a supply of yew in the country, they were

* To show how quickly the English learned the full value of the bow is seen from the fact that in the thirteenth century they actually clad archers in heavy armour to take the field mixed with the Cavalry.

† To protect archers from attacks by Cavalry they were provided with long stakes pointed at both ends; these were planted in the ground before them, sloping towards the enemy.

compelled to make four bows of witch-hazel, ash, or elm to one of yew. Also, in order to encourage shooting, they were not allowed to charge more than a specified sum, regulated by Parliament, for a yew bow; in the reign of Edward IV. this price was 3*s.* 4*d.*

Even with the introduction of fire-arms the life of the bow was by no means at an end; it lingered for many years, and its death was found difficult of achievement. Sir John Smyth, in his 'Discourse on Weapons,' published in the latter half of the sixteenth century, says: 'The change effected in the military weapons of this kingdom was, owing to the youth, inexperience, and vanity of some men, who were unable to offer any solid reason, and, in fact, were averse to offer any reason at all, for a conduct opposite to the opinion of soldiers, both English and foreign; and therefore for the experience, I and many others, both noblemen, gentlemen, and great captains of many nations whom I have served amongst, have had of the small effects of weapons of fire in the field, with the reasons before alleged; for my part, I will never doubt to adventure my life, or many lives if I had them, amongst eight thousand archers complete, well chosen and appointed, and therewithal provided with great store of sheaves and arrows, as also with a good overplus of bows and bowstrings, against twenty thousand of the best arquebusseers that are in Christendom.'

An excellent instance of tremendous slaughter being caused by arrows is that of the battle of Towton. The Lancastrians, having discharged their bows while a blinding snowstorm was in progress, the arrows fell short of the enemy. Lord Falconbridge, who commanded the Yorkists, grasping at a moment the situation, ordered his men after shooting one flight to retire some yards from their original position. The Lancastrians in the meantime having used all their arrows without effect, none coming within 'forty tailors' yards' of the mark, the Yorkists were ordered to advance, and not only did they discharge their own shafts, with the assistance of the wind, but also used those

of the enemy which were embedded in the ground in front of them, with the result that a tremendous victory followed ; the Lancastrians fled in disorder towards York, many being drowned in the river at Tadcaster ; it is recorded that of one hundred thousand troops in the field on this occasion thirty-six thousand were killed.

To show the struggle for superiority which always existed between the bow and the fire-arm, it is interesting to record that a match was held so late as the year 1792 between the two weapons, at Pacton Green, Cumberland, at one hundred yards ; victory fell to the bow with sixteen hits as against twelve. Later in the same year a second match at one hundred yards took place at Chalk Farm, between Mr. Glynn, of the Toxophilite Society, and Doctor Higgins, of Soho. The bow was again successful by fifteen hits to twelve.

The length of the arrow in the very warlike days of the contests of the Roses was three feet, and it seems to have generally remained this length up to its last days. Paulus Jovius, who visited England in the middle of the sixteenth century, says ' they shoot arrows somewhat thicker than a man's little finger, two cubits (thirty-six inches) long, and headed with barbed steel points, from wooden bows of extraordinary size and strength. The arrows of other nations, and especially of uncivilised tribes, have assumed all forms: the points of some are formed by merely sharpening the shaft, others possess a sharpened flint as a head ; while of the arrows with metal heads some are found of bronze, but the usual metal of the time of the bow's zenith was iron. The heads of arrows of savage tribes are attached in all shapes. Sometimes the spade-shape is found, at others the barbed form, while some have a leaf-shaped point.

Some Chinese Tartar arrows, when discharged from the bow, make a shrill whistling noise, caused by the rush of air through

* In the thirteenth century it was found that twelve arrows could be fired from a long-bow while the arbalister was preparing his charge, and later six arrows could be fired to one musket ball.

apertures in the head; in war they are used for night signals and for conveying messages, the paper being secured in the apertures. Other arrows of the Chinese possess steel spear-shaped heads, and others are armed with a formidable trident of steel. In England whistling arrows were used in the time of Henry VIII.

Arrows were also employed to set fire to ships and towns, and also to perform other functions. Matthew Paris, in recording the capture of Damietta, states: 'We discharged fiery darts, and stones from our sea mangonels, and we threw small bottles full of lime, made to be shot from a bow, or small sticks like arrows, against the enemy. Our darts, therefore, pierced the bodies of their pirates, while the stones crushed them, and the lime, flying out of the broken bottles, blinded them.'

The heads of the earlier arrows were fixed by means of lashing; those of later times by a metal ferrule. Feathers seem to have been generally used throughout all ages, and so fitted as to lend a rotary movement to the arrow, and thus steady its flight.

An interesting specimen of a long-bow of the sixteenth century is to be seen in the Royal United Service Museum. It was one of the complement of the ill-fated 'Mary Rose'* which sank on July 20, 1545. It is six feet four inches in length, and was recovered from the wreck in the year 1841.

The Cross-Bow

Just as the long-bow was the national weapon of England, so was the cross-bow the principal arm of the French, Flemings, Germans, Italians, and Spaniards. In French the appellation is *arbalète*, derived from the two Latin words *arcus* and *balista*.

* The 'Mary Rose,' sixty guns, five hundred tons, was built in the year 1509. In 1521 she was described as being one of the five largest ships in the Navy. On the occasion of the attack on Portsmouth in 1545, in moving out to meet the French fleet, being already very low in the water, she heeled so much when her helm was put hard over that the sills of her open lower ports, only sixteen inches out of the water, were submerged. She quickly filled and sank, carrying with her her captain, Sir George Carew, and all hands with the exception of about thirty-five persons. The King witnessed the disaster from the shore.

The introduction of the cross-bow was probably not earlier than the tenth century, though similar weapons were found amongst the Greeks and the Romans. The cross-bow was not merely confined to a hand-weapon, but it assumed huge dimensions as an engine of war under the name of *ribaudequin* ; the steel bow of this enormous weapon measured twelve or fifteen feet, the stock was a foot in diameter, and the arrow or javelin was heavy and six feet in length. These enormous contrivances were stationed on the walls of towns and forts, and four men were required to wind the windlass.

The ordinary hand cross-bow was the same in form as these immense engines. The stock at about the middle possessed a slit from top to bottom for approximately a space of four inches. This slit in the stock contained a wheel of steel, which projected slightly above the level of the stock ; the wheel was provided with notches to catch the string of the bow when bent ; it also contained, on the opposite side of the circumference, further notches into which the spring of the trigger was inserted to keep the wheel from revolving. The trigger was near the handle, and when pressed it released the spring in the notch of the wheel (which was called the nut); the string was accordingly liberated, and carried with it the dart or arrow which had been placed in front of it.

Various methods were employed for bending the bow. With the smaller weapons the string (which was always double) was brought back to the nut by means of a lever, termed *pied de chèvre* on account of its appearance. The larger bows were bent by means of the feet and a stirrup, while others possessed a *moulinet* and pulley for the purpose. The missiles employed were arrows, darts (termed quarrels), stones, and leaden balls. The arrows or bolts * were only half the length of those for the long-bow.

* The 'Bolt in Tun' was once a common sign for a tavern or inn. It was customary to chalk the bung of a barrel as a target, and the contents of the cask were competed for and assigned to the first who hit the mark.

The stocks of the cross-bow were sometimes straight, and sometimes curved towards the extremity like an ordinary sporting gun. In Spain, where the cross-bow was particularly favoured, many skilful manufacturers of the weapon arose, but it was not usual for any of them to make both the steel bow and also the stock; each portion had its special manufacturers.

The point-blank range of the cross-bow was approximately sixty yards. The military weapon would kill a man at a distance of two hundred yards, and consequently excel the fire-arm of the day, over which it had the further advantage of being silent. The cross-bow as a rule commanded a longer range than the English long-bow. It was at the hands of the cross-bow that William Rufus met his death in the New Forest,* and although it was customary to frequently poison the arrows when in pursuit of the larger game, no evidence, except the suddenness of his death, exists that it was a poisoned arrow which struck the king. Lord de la Warre, when forest-ranger, marked the spot where the king fell by a stone bearing the following inscriptions: '(1) Here stood the oak tree, on which an arrow shot by Sir Walter Tyrrel at a stag, glanced and struck William II., surnamed Rufus, in the breast; of which stroke he instantly died, on the 2nd August 1100. (2) William II., being thus slain, was laid in a cart belonging to one Purkiss, and drawn from hence to Winchester, and buried in the cathedral church of that city. (3) That the spot where an event so memorable occurred might not hereafter be unknown, this stone was set up by John Lord de la Warre, who has seen the tree growing in this place.'

Military Forks

Military Forks were used throughout the fifteenth as well as in the sixteenth century. The weapon does not appear to have

* In the New Forest William the Conqueror's eldest son received an arrow in his heart. In May 1100 the nephew of William Rufus was killed by an arrow discharged inadvertently, and only three months afterwards the Conqueror's other son fell by the same weapon in the same place.

assumed any one form even in the number of prongs. In the case of the two-pronged fork a hook is usually attached at the point of bifurcation; it was chiefly used for hooking the bridles of the mounted men. Sometimes one of the prongs of the fork is fitted with a knife for cutting the bridle when it has been hooked. Some forms of two-pronged forks possess barbs near the points to secure and assist in pulling a mounted man off his horse. The German Catchpole (Fangeisen) of the fifteenth and sixteenth centuries corresponds to the two-pronged barbed fork, except it was not intended to penetrate. It possesses very large barbs acting on springs, which open when the neck of a mounted man is forced through them and close immediately afterwards, so rendering it impossible for the victim to release himself.

At the siege of Mons in 1691 forks were used by the Austrians.

The Air-Gun

The Air-gun was invented by Guter of Nuremberg in 1560. It is a weapon in which condensed air is employed as the propelling agent, the bore of the barrel being connected with a reservoir enclosed within or attached without the stock; into this reservoir air is forced, in the case of the external copper ball by means of a pump, and where the reservoir is contained in the stock by a piston. The pulling of the trigger of the gun opens a valve and permits either the whole or a portion of the air to rush into the barrel in rear of the missile, which is either a dart or a ball. In some cases as many as twenty bullets may be fired with one loading of the reservoir. The air-gun was much used during the seventeenth and eighteenth centuries, and was the principal weapon of certain regiments.

The Blowpipe

The Blowpipe, or blow-gun, consists of a tube through which missiles are blown with the breath. In South America the

Indians manufacture it from wood, and it is usually between seven and ten feet in length, and possesses a bore of about a quarter of an inch in diameter. In Borneo and the Malay peninsula similar weapons are made ; generally, however, a lance-head is fixed to the end of the bamboo, or cane, so that the weapon fulfils the combined purpose of a lance and a gun. Through these blowpipes are blown poisoned arrows made of split cane, usually about a foot in length, and they are wound at the butt with fibrous matter so as to exactly fit the bore of the gun, and consequently offer greater resistance to the pressure of air.

The Boomerang

The Boomerang was a missile weapon of war and the chase, used by the Aborigines of Australia, consisting of a rather flat piece of hard wood, bent or curved in its own plane, and from sixteen inches to two feet long. Generally, but not always, it is flatter on one side than on the other. In some cases the curve from end to end is nearly an arc of a circle, in others it is rather an obtuse angle than a curve, and in a few examples there is a slight reverse curve towards each end. In the hands of a skilful thrower the boomerang can be projected to great distances, and can be made to ricochet almost at will ; it can be thrown in a curved path, somewhat as a bowl can be ' screwed ' or ' twisted,' and it can be made to return to the thrower and strike the ground behind him. It is capable of inflicting serious wounds.

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